

ABSTRACT

A scanning camera with a rotating drum has one or more sensors characterized by a non-radial optical axis. With two sensors on opposite sides of the drum and facing in substantially the same direction, stereoscopic recording of a panorama is accomplished as the drum rotates. Rapid rotation of the scanning camera produces panoramic motion picture recording, with the final frame speed dependent on the sensitivity and speed of the sensor, the resolution desired, and the capabilities of the recording device. The preferred embodiment employs rotating fisheye lenses for a substantially full-sphere field of view. Streamlining of the lens elements on the drum surface is described for quiet operation of the camera, even at high rotation speeds. The rapid rotation of the drum characteristic of motion picture frame rates can improve both the stability and portability of the camera. The gyroscopic effect of the rotating weight of the drum can increase the stability of the camera, and the apparent weight of the camera can be reduced by the lifting effect of aerodynamic elements such as rotors added to the rotating drum. The adjustment of convergence are described that improve the viewing of stereoscopic images. Additional sensors in the same arrangement are used to increase resolution through multiplexed recording of the image data. Recording image information using film, either internal or external to the camera drum, is also described as a cost-effective alternative to digital media storage.